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ROCKWELL COLLINS, INC.
Attention: Kyle Epele
M/S 124-323
400 Collins Rd. NE
Cedar Rapids, IA 52498

EXAMINER

BROADHEAD, BRIAN J

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Appeal 2008-2621
Application 10/629,286
Technology Center 3600

Before: HUBERT C. LORIN, ANTON W. FETTING and
STEVEN D.A. McCARTHY, *Administrative Patent Judges.*

DECISION ON APPEAL

1 STATEMENT OF THE CASE

2 The Appellants appeal under 35 U.S.C. § 134 (2002) from the final

3 rejection of claims 1-19. We have jurisdiction under 35 U.S.C § 6(b)

4 (2002). We AFFIRM the rejections of claims 1-16, 18 and 19. We

1 REVERSE the rejection of claim 17.

2 The claims on appeal relate to warning aircraft pilots of potential
3 hazards. (Spec. 1.) Independent claim 1 is typical:

4
5 1. A method of assuring separation
6 between an aircraft and potential flight hazards,
7 comprising:
8 predicting an intended path of the aircraft;
9 identifying a potential hazard to the aircraft
10 along the intended path;
11 determining a distance from the potential
12 hazard that the aircraft is required to maintain;
13 determining an ability of the aircraft to
14 maneuver to avoid the identified hazard and to
15 remain further from the identified hazard than the
16 distance;
17 determining a probability that the aircraft
18 will not maintain the distance from the identified
19 hazards; and
20 alerting a pilot of the aircraft if the
21 probability is greater than a predetermined level.
22

23 ISSUES

24 The issues in this appeal are whether the Appellants have shown that
25 the Examiner erred by:

26 rejecting claims 1-3, 9-15 and 17-19 under 35 U.S.C.
27 § 102(e) (2002) as being anticipated by Ybarra (Publ. US
28 2004/0068372 A1, publ. 8 Apr. 2004);

29 rejecting claims 4-7 under 35 U.S.C. § 103(a) (2002) as
30 being unpatentable over Ybarra and Myers (Patent US
31 6,085,147, issued 4 Jul. 2000);

rejecting claim 16 under § 103(a) as being unpatentable over Ybarra and Campbell (Publ. 2004/0024500 A1, publ. 5 Feb. 2004); and

rejecting claim 8 under § 103(a) as being unpatentable over Ybarra, Myers and Campbell.

These issues turn, at least in part, on whether Ybarra discloses a method including the step of alerting a pilot of the aircraft if the probability that the aircraft will not maintain a distance from identified hazards is greater than a predetermined level; and on whether Ybarra discloses a system including a visual notification apparatus configured to highlight at least one of a graphical representation of a potential hazard and at least part of a graphical representation of the flight path of the aircraft, to thereby advise of the possibility of a violation of any of the required separation.

FINDINGS OF FACT

The record supports the following findings of fact (“FF”) by a preponderance of the evidence.

1. Ybarra discloses a system including a threat avoidance processor and displays. (Ybarra 2, ¶¶ 0021 and 0022.)

2. The system continuously determines the position of the aircraft and determines information from which the position of the aircraft in the future may be predicted. (Ybarra 4, ¶ 0033 and 5, ¶ 0042.) In other words, the system predicts an intended path of the aircraft.

1 3. The system continuously “assesses the risk of collision with
2 terrain, or encountering adverse weather conditions” and provides alerts to
3 the flight crew corresponding to the risks. (Ybarra 4, ¶ 0033.)

4 4. The system predicts threats based on working values of
5 parameters and position or trend data (that is, data regarding the path of the
6 aircraft). (Ybarra 5 ¶ 0043 and 8, claim 1.)

7 5. Among the parameters used in implementing a “controlled
8 flight into terrain” threat avoidance processor are advice criteria, that is,
9 parametric descriptions of forms and circumstances for providing audible
10 or visual advice. (Ybarra 6 ¶ 0052; Tables 1 and 3.) The advice criteria
11 include minimum terrain clearance distance and terrain “look-ahead,” which
12 the reference defines as the time or distance believed to be sufficient for
13 escaping a threat. (Ybarra, Tables 3 and 4.)

14
15 PRINCIPLES OF LAW

16 “To anticipate a claim, a prior art reference must disclose every
17 limitation of the claimed invention, either explicitly or inherently.” *In re*
18 *Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). A claim under
19 examination is given its broadest reasonable interpretation consistent with
20 the underlying specification when determining whether the subject matter of
21 the claim is either anticipated or obvious. *In re American Acad. of Science*
22 *Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Limitations not expressed
23 in the language of the claims cannot be imported from the specification. *E-*
24 *Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003).

A claim is unpatentable for obviousness under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set out factors to be considered in determining whether claimed subject matter would have been obvious:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id., 383 U.S. at 17.

ANALYSIS

A. *The Rejection of Claims 1 and 11 Under § 102(e)*

The Appellants contend that Ybarra does not disclose a method including the step of alerting a pilot of an aircraft if the probability that the aircraft will not maintain a distance from identified hazards is greater than a predetermined level as recited in claim 1. The Appellants also contend that Ybarra does not disclose a method including the step of advising a pilot of the aircraft if the possibility that the aircraft, traveling along the intended path, will be less than the distance from any of the terrain, weather events,

1 and nearby aircraft is above a predetermined threshold as recited in claim 11.

2 (App. Br. 5.) We disagree.

3 Ybarra describes the system disclosed in the reference as one that
4 continuously “assesses the risk of collision with terrain, or encountering
5 adverse weather conditions” and provides alerts to the flight crew
6 corresponding to the risks. (FF 3.) We agree with the Examiner that the risk
7 assessed is a probability (or possibility, in the language of claim 11). Since
8 the assessment is performed by a processor using numerical values of
9 parameters such as the minimum terrain clearance distance and the “look-
10 ahead” (*see* FF 5), the probability or possibility must be a number.

11 Ybarra’s system assesses this risk in order to make a decision whether
12 to provide an alert to the flight crew. In order to make a decision on the
13 basis of a number such as the risk or probability of collision with the terrain,
14 the processor must have another number to which the risk or probability
15 might be compared. This number would be the “predetermined level” of
16 claim 1 and the “predetermined threshold” of claim 11.

17 In view of this reasoning, we agree with the Examiner (Ans. 6-7) that
18 Ybarra discloses “alerting a pilot of the aircraft if the probability is greater
19 than a predetermined level” as recited in claim 1 and “advising a pilot of the
20 aircraft if the possibility is above a predetermined threshold” as recited in
21 claim 11. On the record before us, the Appellants have not shown that the
22 Examiner erred in rejecting claims 1 and a under § 102(e).

1 B. *The Rejection of Claim 17 Under § 102(e)*

2 We agree with the Appellants (App. Br. 6) that Ybarra does not
3 disclose a method including the step of accessing information relative to
4 areas of restricted airspace proximal the aircraft as recited in claim 17.
5 Essentially, the Examiner and the Appellants disagree as to the scope of the
6 term “restricted airspace.” During prosecution, the Patent and Trademark
7 Office “applies to the verbiage of the proposed claims the broadest
8 reasonable meaning of the words in their ordinary usage as they would be
9 understood by one of ordinary skill in the art” *In re Morris*, 127 F.3d
10 1048, 1054 (Fed. Cir. 1997). We understand “restricted airspace” to be a
11 term of art in relevant fields such as avionics, aeronautical engineering and
12 design and airplane navigation and flight identifying a type of special use
13 airspace.

14 Ybarra discloses a system which accesses information relative to
15 obstacles such as terrain, adverse weather and other airplanes. (Ybarra 4, ¶
16 0033). The Examiner has not identified for us any passage in Ybarra
17 disclosing a step of accessing information relative to a restricted airspace.
18 Since “restricted airspace” is a term of art, its meaning cannot extend
19 reasonably to encompass terrain, adverse weather or other airplanes. We
20 do not sustain the Examiner’s finding that Ybarra discloses accessing
21 information relative to areas of restricted airspace proximal the aircraft.

22 On the record before us, the Appellants have shown that the Examiner
23 erred in rejecting claim 17 under § 102(e).

1 *C. The Rejection of Claim 18 Under § 102(e)*

2 The Appellants contend that Ybarra does not disclose a visual
3 notification apparatus configured to highlight at least one of a graphical
4 representation of a potential hazard and at least part of a graphical
5 representation of the flight path of the aircraft, to thereby advise of the
6 possibility of a violation of any of the required separation distances. (App.
7 Br. 6). The Examiner responds that this information is disclosed in
8 paragraph 0017 of Ybarra. In particular, the Examiner points to Ybarra's
9 statement that "[v]isual advice may be presented by symbols or colors of a
10 graphic presentation for display to a flight crew member." (Ans. 8, citing
11 Ybarra 2, ¶ 0017). The Examiner also points to Ybarra's statement that the
12 display system may be of a conventional type as specified in Advisory
13 Circular AC 25-23. (*Id.*) Since the Appellants did not file a reply contesting
14 these findings, we sustain the findings. On the record before us, the
15 Appellants have not shown that the Examiner erred in rejecting claim 18
16 under § 102(e).

17
18 *D. The Rejection of Claims 4-8 and 16 Under § 103(a)*

19 Claims 4-7 stand rejected under § 103(a) as being unpatentable over
20 Ybarra and Myers. Claim 8 stands rejected under § 103(a) as being
21 unpatentable over Ybarra, Myers and Campbell. The Appellants' sole
22 contention with respect to the patentability of claims 4-8 is that these claims
23 depend ultimately from claim 1 and that the Appellants believe claims 4-8 to
24 be patentable for the same reasons advanced in support of the patentability
25 of claim 1. Since we disagreed with the reasons advanced by the Appellants

1 in support of the patentability of claim 1, namely, the Appellants' assertion
2 that Ybarra fails to disclose a method including the step of alerting a pilot of
3 the aircraft if the probability that the aircraft will not maintain a distance
4 from identified hazards is greater than a predetermined level, we conclude
5 that the Appellants have not shown on the record before us that the
6 Examiner erred in rejecting claims 4-8 under § 103(a).

7 Claim 16, which depend from claim 11, stands rejected under
8 § 103(a) as being unpatentable over Ybarra and Campbell. The Appellants'
9 sole contention with respect to the patentability of claim 16 is that claim 16
10 depend ultimately from claim 11 and that the Appellants believe claim 16 to
11 be patentable for the same reasons advanced in support of the patentability
12 of claim 11. Since we disagreed with the reasons advanced by the
13 Appellants in support of the patentability of claim 11, namely, the
14 Appellants' assertion that Ybarra does not disclose a method including the
15 step of advising a pilot of the aircraft if the possibility that the aircraft,
16 traveling along the intended path, will be less than the distance from any of
17 the terrain, weather events, and nearby aircraft is above a predetermined
18 threshold, we conclude that the Appellants have not shown on the record
19 before us that the Examiner erred in rejecting claims 4-8 under § 103(a).

20
21 CONCLUSIONS

22 On the record before us, the Appellants have not shown that the
23 Examiner erred in rejecting claims 1-3, 9-15, 18 and 19 under § 102(e) as
24 being anticipated by Ybarra. The Appellants also have not shown that the
25 Examiner erred in rejecting claims 4-7 under § 103(a) as being unpatentable

1 over Ybarra and Myers; in rejecting claim 16 under § 103(a) as being
2 unpatentable over Ybarra and Campbell; and in rejecting claim 8 under
3 § 103(a) as being unpatentable over Ybarra, Myers and Campbell.

4 On the record before us, the Appellants did show that the Examiner
5 erred in rejecting claim 17 under § 102(e) as being anticipated by Ybarra.

6
7 DECISION

8 We AFFIRM the rejection of claims 1-16, 18 and 19.

9 We REVERSE the rejection of claim 17.

10 No time period for taking any subsequent action in connection with
11 this appeal may be extended under 37 C.F.R. § 1.136(a) (2007). *See*
12 37 C.F.R. § 1.136(a)(1)(iv) (2007).

13
14 AFFIRMED-IN-PART

15
16 JRG

17 ROCKWELL COLLINS, INC.

18 Attention: Kyle Eppeler

19 M/S 124-323

20 400 Collins Rd. NE

21 Cedar Rapids, IA 52498